

YO997-410

SMOOTHING CALIBRATION FILES TO IMPROVE REPRODUCTION OF  
DIGITIZED IMAGES

ABSTRACT OF THE INVENTION

5 A method, system and computer article are presented for  
smoothing an image calibration signal in order to smooth  
a reproduced signal, and to identify the presence of any  
remaining spikes or other significant deviations. The  
invention recognizes the problems with raw calibration  
10 signals, and posits that the calibration signals be  
filtered by methods and systems described. For example,  
calibration data may be smoothed by fitting the  
calibration data to a parametric model employing either  
linear or non-linear least squares. Alternate techniques  
15 implement smoothing using optimal filtering. An aspect  
of the invention is a method, computer product or article  
of manufacture for improving an initial calibration  
profile having an initial profile extent to form an  
improved calibration profile. The initial profile may be  
20 formed for a scanner employing a linear array CCD and  
having a particular direction of motion. One method  
includes forming an extended profile extent in the  
direction of motion using quadratic extrapolation,  
applying multirate filtering to the extended profile to  
25 form a filtered profile, and truncating the filtered  
profile to bring it to the initial profile extent to form  
the improved calibration profile.